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A parasite of the Chukchee Sea ringed seal

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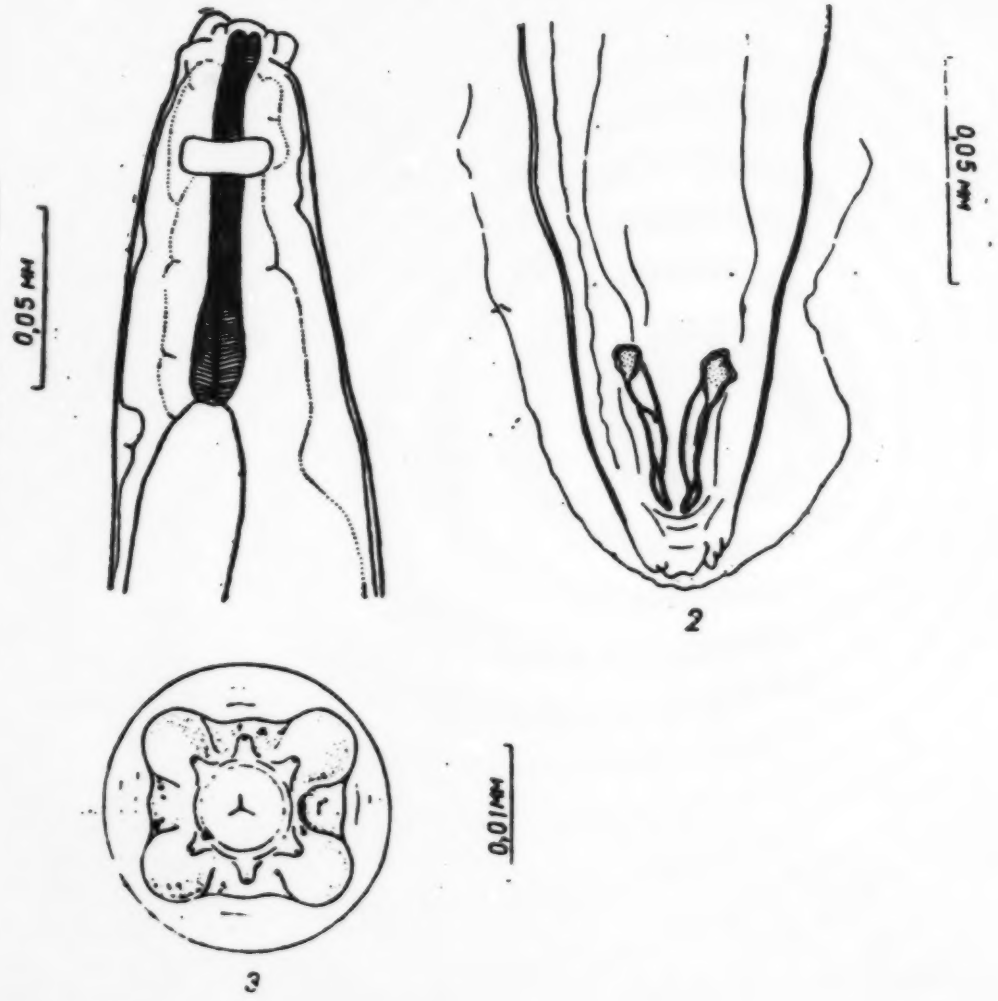
Members of the genus *Parafilaroides* Dougherty, 1946 (fam. Filaroididae) parasitize the lungs of marine mammals. Six species of this genus have so far been described, and they have been recorded only among pinnipeds in different and relatively widely separated zones of the Pacific Ocean (Railliet, 1899; Baylis and Daubney, 1925; Dougherty, 1943 and 1946; Dougherty and Herman, 1947; Skryabin *et al.*, 1952; Mawson, 1953; Delyamure, 1955; and Kurochkin and Zablotskii, 1958). Thus, *Parafilaroides gymnurus* (Railliet, 1899) Dougherty, 1946 has been described as a parasite of the common seal (*Phoca vitulina vitulina*) inhabiting the waters of Northern Europe. Three species, *P. decorus* Dougherty et Herman, 1947, *P. nanus* Dougherty et Herman, 1947, and *P. prolificus* Dougherty et Herman, 1947 have been recorded in California (San Diego zoo); the first from a California sea lion (*Zalophus californianus*), and the second and third from the northern sea lion (*Eumetopias jubatus*). A fifth species, *P. hydrurgae* Mawson, 1953, is described as a parasite of the light leopard seal (*Hydrurga leptonyx*) inhabiting the southern zones of the Pacific and Indian oceans (the Macquarie Islands and Heard Island). And, finally, the sixth species, *P. caspicus* Kurotchkin et Zablozky, 1958 was established from the Caspian seal (*Pusa caspica*).

Examining collections made by D. P. Kozlov from the ringed seal (*Pusa hispida*) of the Chukchee Sea, we have determined a seventh species of the genus *Parafilaroides*, to the description of which the article is devoted.

Figure 1: *Parafilaroides arcticus* sp. nov.

1: anterior end of the body of a female
2: posterior end of the body of a male
3: anterior end, apically



Parafilaroides arcticus **n. sp.** (Fig. 1)

Host: *Pusa hispida* Schreber, the ringed seal.
Location: the lungs.
Place of discovery: the Chukchee Sea.
Description. Small threadlike nematodes of a dirty white color. The cuticle is thin and in the medial and anterior portions of the body it is distended in places. The mouth is surrounded by tiny papillae, four of

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which are located at the tips of thickenings lying at the base of a four-sided truncated pyramid forming the anterior end, and two of which are in the gaps between these thickenings, on the dorsal and ventral sides of the body.

The Male. The body length is 9.196 mm and the width at the end of the esophagus is 0.081 mm. Bursa and ribs are absent. At the tail end are two paired subterminal papillae. The spicules are thin, flattened, and almost of equal length (0.0389 and 0.0378 mm); their distal ends are somewhat curved ventrally and towards the mid-line of the body. The proximal ends of the spicules are porous and 0.0073 mm wide. No accessory organ was found. The esophagus is thin, 0.199 mm long, and 0.0108 mm wide at the middle and 0.0177 mm wide at the base. The nerve ring is located at a distance of 0.0347 mm from the anterior end.

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The Female. We had at our disposal two fragments of the anterior portion of the body, with lengths of 11.8 and 10.3 mm. The body width at the end of the esophagus is 0.0614 mm. The length of the esophagus is 0.102 mm; its maximum width, 0.011 mm. The nerve ring is located at a distance of 0.0378 mm from the anterior end.

The measurements of the species under discussion and a comparison of it to other members of the genus *Parafilaroides* are given in the table.

Differential Diagnosis

The table shows that the species under discussion is similar to *Parafilaroides decorus* and to *Parafilaroides caspicus*, but it differs from them in a number of essential features.

It differs from *P. decorus* in the greater length and smaller width of the male's body and in its longer esophagus and larger spicules.

It differs from *P. caspicus* in the smaller body length of the male and shorter length and smaller width of the esophagus.

Furthermore, the nerve ring of the species under discussion is located almost twice as close to the anterior end than in *P. decorus* and *P. caspicus*. It is particularly noteworthy that the species under comparison differ

significantly in their hosts and distribution in zones of the Pacific Ocean that are far removed from one another.

Bearing in mind that the species *Parafilaroides prolificus* has been described only from the female, we compared their features with some features of the females of the species under discussion and we found that they differ drastically in the width of the body and esophagus, as well as in their hosts and places of discovery. To this should be added the fact that the length of the fragment of the anterior half of the body of a female of the species under discussion is greater than the total body length of females of the species *P. prolificus*.

All that has been said is grounds for identifying the nematodes that we have examined as a separate species of the genus *Parafilaroides*.

We feel it our debt to express our gratitude to D. P. Kozlov for the material that he collected and graciously entrusted to us for examination.

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A Comparison of the Species of the Genus *Parafilaroides* Dougherty, 1946

Feature	Sex	*P. arcticus*	*P. gymnurus*	*P. decorus*	*P. nanus*	*P. prolificus*	*P. hydrurgae*	*P. caspicus*
Body length	♂	9.196	15.0 - 18.0	6.0 - 7.0	2.8	–	25.0 - 37.0	7.5 - 7.7
	♀	–	22.0 - 23.0	16.0 - 21.0	4.5 - 5.2	9.0	90.0	–
Body width	♂	0.081	0.12	0.092	0.105	–	–	0.07
	♀	0.073	0.17	0.165	0.215	0.240	–	0.02
Length of esophagus	♂	0.199	–	0.120 - 0.125	–	–	0.18	0.12 - 0.13
	♀	0.102	–	0.155 - 0.170	0.18 - 0.20	0.185	0.25	–
Width of esophagus	♂	0.010	–	0.012	–	–	–	0.02
	♀	0.011	–	0.021	0.035	0.038	–	–
Distance from nerve ring to anterior end	♂	0.034	–	0.062	–	–	–	0.06
	♀	0.037	–	0.078	–	–	–	–
Length of spicules		0.037 - 0.038	0.042 - 0.047	0.035	0.039	–	0.055 - 0.060	0.037

All measurements are given in mm.
Sources: *P. arcticus*, Delamure and Alekseev, 1965; *P. gymnurus*, Baylis and Daubney, 1925; *P. decorus*, Dougherty and Herman, 1947; *P. nanus*, Dougherty and Herman, 1947; *P. prolificus*, Dougherty and Herman, 1947; *P. hydrurgae*, Mawson, 1953; and *P. caspicus*, Kurochkin and Zablotskii, 1958.